REMARKS

Reconsideration and allowance are requested. Claims 44 – 49 and 52 – 55 are cancelled without prejudice or disclaimer. The amended claims are amended to clarify claim language or typographical error and to improve punctuation. This Supplemental Amendment corrects an amendment to claim 38 and otherwise is identical to the Amendment filed May 1, 2006. No claim amendments are made for patentability.

Rejection of claims 44-49 and 52-55

On page 2 of the Office Action, the Examiner has rejected claims 44-49 and 52-55 under 35 U.S.C. 102(b), as being anticipated by Kato (USP 5,559,557). Applicants have cancelled these claims thus rendering this rejection moot.

Rejection of claims 35-43, 50-51 and 56-70

The Examiner rejects claims 35-43, 50-51 and 56-70 under 35 U.S.C. 103(a) as allegedly being unpatentable over Kato in view of Azadegan, et al. (USP 5,612,900) ("Azadegan"). Applicants traverse this rejection and submit that one of skill in the art would not have sufficient motivation or suggestion to combine Kato with Azadegan.

To establish a *prima facie* case of obviousness, the Examiner must meet three criteria. First, there must be some motivation or suggestion, either in the references themselves, or in the knowledge generally available to one of ordinary skill in the art, to combine the references. Second, there must be a reasonable expectation of success, and finally, the prior art references must teach or suggest all the claim limitations. The Examiner bears the initial burden of providing some suggestion of the desirability of doing what the inventor has done. "To support the conclusion that the claimed invention is directed to obvious subject matter, either the

references must expressly or impliedly suggest the claimed invention or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references." MPEP 2142.

If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959). Furthermore, if the examiner determines there is factual support for rejecting the claimed invention under 35 U.S.C. 103, the examiner must then consider any evidence supporting the patentability of the claimed invention, such as any evidence in the specification or any other evidence submitted by the applicant. The ultimate determination of patentability is based on the entire record, by a preponderance of evidence, with due consideration to the persuasiveness of any arguments and any secondary evidence. *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). The legal standard of "a preponderance of evidence" requires the evidence to be more convincing than the evidence which is offered in opposition to it. With regard to rejections under 35 U.S.C. 103, the examiner must provide evidence which as a whole shows that the legal determination sought to be proved (i.e., the reference teachings establish a *prima facie* case of obviousness) is more probable than not. MPEP 2142.

The test for obviousness is what the combined teachings of the references would have suggested to one of ordinary skill in the art, and all teachings in the prior art must be considered to the extent that they are in analogous arts. Where the teachings of two or more prior art references conflict, the examiner must weigh the power of each reference to suggest solutions to one of ordinary skill in the art, considering the degree to which one reference might accurately discredit another. *In re Young*, 927 F.2d 588, 18 USPQ2d 1089 (Fed. Cir. 1991) MPEP 2143.01.

The mere fact that references <u>can</u> be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990). MPEP 2143.01.

With these principles in mind, we turn to the attempt to combine the Kato with Azadegan. The Examiner concedes that Kato fails to disclose using an at least three segment piece-wise linear function but asserts that because Azadegan discloses a piece-wise linear scaling function "in order to insure that acceptable picture quality is maintained across coded regions" that it would have been obvious to incorporate Azadegan's piece-wise linear scaling function into Kato. Applicants submit that by a preponderance of the evidence, one of skill in the art would not be motivated to combine Kato with Azadegan for the purpose of insuring acceptable picture quality across coded regions.

One reason for this lack of motivation is that Kato continuously discusses and teaches that his quantizer and dequantizer are linear. Several examples include:

- "The DCT circuit 2 is adapted to orthogonally transform each block of 8 pixels x 8 lines into a block of DCT coefficients (e1) which is applied to a quantizer 3 that linearly quantizes the DC component coefficient of each block using a predetermined quantization set width …." Col. 2, lines 38 – 43.

- "In the MPEG1 technique, a value with this 11-bit precision always undergoes a linear quantization process for transformation into an 8-bit number in the range 0 to 255…." Col. 3, lines 59 – 62;

- "A DCT circuit 61 is adapted to orthogonally transform blocks of pixels representing a picture into 8x8 blocks of DCT coefficients, and to supply the DCT coefficients to a quantizer 62 which functions to linearly quantize the DC component coefficients…." Col. 7, lines 25 – 29.

- "An inverse quantizer 83 is adapted to receive the recovered quantized DC component coefficients and to apply an inverse-linear-quantization process thereto...." Col. 9, lines 59 – 61.

- "In the case MPEG data, linear inverse quantization is normally carried out in the inverse quantization unit 502 and a value equal to half the inverse quantization S18 is added as an offset to a result obtained from the linear inverse-quantization." Col. 17, 25 – 29.

- "In the case of MPEG data, linear inverse quantization is normally carried out." Col. 17, lines 40-41.

- "The DC coefficient inverse quantization unit 504 is adapted to linearly inverse quantize the DC coefficients S504 in accordance with the inverse quantization step signal S508." Col. 17, lines 57 – 60.

As mentioned by the Examiner, Kato does refer to a flag that turns off linear dequantization into non-linear dequantization. Col. 13, line 23. After introducing this idea of using either linear or non-linear, there is little if any discussion of the non-linear quantization with reference to FIG. 15. Col. 12, line 56 – col. 13, line 25. Kato basically states that the qscale_type flag can turn off linear dequantization and turn on non-linear dequantization but there are not any details beyond that.

Applicants therefore highlight with the above citations to the Kato reference that it clearly teaches linear quantization and dequantization. The Examiner seeks to establish that it would be obvious to replace the linear quantization process of Kato with one that is step-wise linear. As discussed above, the blending of these references would violate the principle wherein if a proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. In this case, the modification involved is the

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change of the quantization in Kato from being linear or non-linear to being step-wise linear. Therefore, since the principle of operation is modified in Kato, there is insufficient motivation or suggestion to combine these references.

The Examiner also asserts that it would be obvious to utilize Azadegan's piece wise linear function for ensuring an acceptable picture quality across coding regions. This benefit that the Examiner asserts is not found in Kato does already exist in that reference. Specifically, Kato teaches receiving a picture quality signal which may correspond to a video sequence, group of pictures, picture, slice, macroblock or block portion of the video signal. The video signal is orthogonally transformed to produce direct current component coefficients, and the direct current component coefficients are quantized using the selected encoding precision. Col. 4, lines 34 – 44. Importantly, as the detailed description of the Kato patent description begins, Kato explains that "the number of quantization bits used for encoding DCT DC component coefficients can be increased with an increase in required picture quality." Col. 6, lines 6 – 8.

Therefore, as one of skill in the art reviews Kato, that person would see that the Kato teaches a system wherein quantization may be done using a selected encoding precision which results in an increase in the number of bits used for encoding to increase the picture quality. This increase may be at the sequence, group of pictures, picture, slice, macroblock or block portion of the video signal. Col. 4, lines 42 – 44. In sum, Applicants submit that Kato already teaches and explicitly recites that his method provides for an acceptable picture quality throughout the block, macroblock, picture etc. Therefore, one of skill in the art reading Kato would not be motivated to look elsewhere for ensuring "that acceptable picture quality across coding regions is maintained" because that benefit is already explicitly provided by the disclosure of Kato.

Because Kato teaches that his method provides for an increased in picture quality across a block, macroblock and so forth, and that increased picture quality requires a linear

quantization/dequantization process, Applicants respectfully submit that one of skill in the art

would not, by a preponderance of the evidence, combine Kato with Azadegan.

Therefore, for at least the foregoing reasons, Applicants submit that Kato should not be

combined with Azadegan because (1) such a combination requires the modification of Kato from

a linear quantization process as taught to a step-wise linear process which changes the principle

of operation of the reference; and (2) the benefit articulated by the Examiner of ensuring picture

quality across coding regions is already expressly taught in Kato and thus one of skill in the art

would believe that the Kato method would provide that benefit. This prevents the existence of a

sufficient amount of motivation and certainly no suggestion to look elsewhere. Inasmuch as the

standard is only by a preponderance of the evidence, Applicants submit that on the balance, there

is more evidence against the motivation to combine in the record than there exists to combine.

Accordingly, since the combination of Kato and Azadegan are cited to reject claims 35 –

43, 50 – 51 and 56 – 70, Applicants submit that these claims are patentable and in condition for

allowance.

CONCLUSION

Having addressed the rejection of claims, Applicants respectfully submit that the subject

application is in condition for allowance and a Notice to that effect is earnestly solicited.

Respectfully submitted,

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